ther effect. There was a 16 msec increase in the PR interval at rest with 2 mg (159 to 175 msec, $P < 0.01$) with no further change at 5 mg. The increase in PR persisted even during peak exercise (115, 134 & 149 msec with placebo, 2 & 5 mg, $P < 0.001$). The drug had no effect on resting & exercise blood pressure, exercise time, VO_2, anaerobic threshold, ventilatory indices, and epinephrine, norepinephrine or aldosterone at peak exercise. However, SDZ WAG 994 completely suppressed the normal increase in plasma renin activity (PRA) with exercise ($P < 0.01$). An interesting and unexpected finding was a dose-dependent increase in ANF seen both at rest and peak exercise ($P < 0.01$). These findings suggest that a single dose of this oral adenosine A_1 selective agonist, has the expected negative chronotropic & dromotropic properties in man, even during exercise when circulating catecholamines were very high (epinephrine 299 ± 220 pg/ml, norepinephrine 1947 ± 998 pg/ml) without any adverse cardiovascular effects. Its effects on PRA & ANF suggest that SDZ WAG 994 may also be an important neurohormonal modulator in man.

MONDAY PM

05:00

723-5 Evaluation of the Antianginal and Anti-ischemic Effects of the Sinus Node Inhibitor Zatebradine Used in Combination with Extended-Release Nifedipine in Patients with Angina Pectoris

William Frishman, Carl Pepine, Robert Weiss, Wolfgang Baiker, Zatebradine Multicenter Study Group. *Albert Einstein College of Medicine, Bronx, NY*

Zatebradine (Z) is a direct sinus node inhibitor which is orally active and, unlike β-adrenergic blockers, has no effect on blood pressure, vascular resistances, and ventricular contractility. We evaluated the anginal and anti-ischemic effects of Z (5 mg administered twice daily) and placebo in 124 patients (pts) already receiving 30–90 mg of extended-release nifedipine once daily, whose treadmill exercise tolerance was still limited. After 2–3 wks of single-blind placebo therapy with reproducible exercise-induced angina on the treadmill, pts were randomized to receive in double-blind fashion twice daily Z ($n = 64$) or twice daily placebo ($n = 60$) in addition to nifedipine. Subjects were followed with serial exercise tests (3 hrs post dose) for 4 wks and angina diaries were maintained. At 4 wks, Z was shown to reduce resting heart rate (HR) in contrast to placebo (12.9 ± 1.23 vs 2.3 ± 1.6 bpm, $p < 0.0001$), and at the end of comparable stages of exercise (Bruce), Z reduced HR in contrast to placebo (16.7 ± 1.2 vs 3.4 ± 1.2 bpm, $p < 0.001$). Despite these significant effects on HR with Z at rest and exercise, there were no additional antianginal benefits of Z from placebo baseline in measurements of total exercise duration, time to 1 mm ST segment depression, or time to onset of angina. Z appears to provide no additional antianginal benefit to pts already receiving nifedipine, and raises questions regarding the benefit of HR reduction alone as an antianginal approach in pts.

05:15

723-6 Hemodynamic Effects of Graded Oral Doses of a New Dopaminergic Analogue CHF 1035 in Patients with Congestive Heart Failure

Carmine Morisco, Bruno Ricciardelli, Luigi Argenziano, Virgilio Rendina, Guido Iaccarino, Carmine Vecchione, Alberto Umile [1], Massimo Volpe, Bruno Trimarco. *I Clinica Medica Università "FEDERICO II" Napoli, Italy; [1] Chiesi Farmaceutici S.p.A., Italy*

We investigated in a randomized double-blind study the hemodynamic effects of 3 single oral doses (5, 10 and 15 mg) of a new dopaminergic analogue (CHF 1035) vs placebo (P) in 18 patients (pts) with congestive heart failure (CHF) (ejection fraction 25 ± 7%). Each patient received on 3 consecutive study-days 2 active doses of CHF 1035 and 1 P dose. The following measurements were performed using a Swan-Ganz catheter pre-dose (PD) and from 20 to 300 min after dosing (AD) (every 20 min for the first 2 hours, then every 60 min): pulmonary capillary wedge pressure (PCWP) (mmHg), cardiac index (CI) (l/min/m^2), stroke volume index (ml/min/m^2), systemic vascular resistance (SVR) (dyne· sec· cm^{-5}), heart rate (HR) (bpm), mean blood pressure (BPm) (mmHg). Plasma levels of norepinephrine (NE) (pg/ml) and epinephrine (E) (pg/ml) were also assessed before and 140 min after CHF 1035 or P administration. The hemodynamic (peak value) and neurohormonal parameters showed the following changes after CHF 1035 administration.

	5 mg		10 mg		15 mg	
	PD	AD	PD	AD	PD	AD
PCWP	22 ± 5	18 ± 4*	20 ± 6	16 ± 9*	21 ± 7	16 ± 6*
CI	3 ± 1	3.4 ± 1*	2.7 ± 1	3.4 ± 1*	3 ± 1	4 ± 1*
SVI	39 ± 12	43 ± 11	38 ± 7	45 ± 10*	40 ± 10	49 ± 11*
SVR	1243 ± 27	1052 ± 265	1382 ± 45	1009 ± 315	1359 ± 36	881 ± 257*
HR	74 ± 11	78 ± 11*	70 ± 11	76 ± 12	74 ± 12	80 ± 10*
BPm	85 ± 12	82 ± 12	85 ± 10	77 ± 13*	87 ± 11	79 ± 12*
NE	299 ± 135	301 ± 156	285 ± 244	244 ± 88*	340 ± 162	308 ± 133
E	56 ± 29	42 ± 21*	65 ± 42	62 ± 44	53 ± 25	58 ± 24

*: $p < 0.05$

No changes in hemodynamic or neurohormonal parameters occurred after P administration. Our results demonstrate that CHF 1035 induce a significant improvement in hemodynamic parameters in pts with CHF. In particular it is able to induce systemic vasodilatation without any reflex increase in catecholamine plasma levels. Thus CHF 1035 appears to be a promising drug for the treatment of CHF.

724 Atrioventricular Nodel Reentry

Monday, March 20, 1995, 4:00 p.m.–5:30 p.m.
Ernest N. Morial Convention Center, Room 102

04:00

724-1 Characteristics of Successful Posterior Septal Sites to Cure Atrioventricular Node Reentry Using a Thermistor Controlled Catheter System

Rafe Chamberlain Webber, John N. Hill, Joseph J. Evans, Richard I. Fogel, Eric N. Prystowsky. *Indiana Heart Institute, Indianapolis, IN*

We prospectively investigated in 55 pts characteristics of successful radiofrequency ablation (RFA) sites to cure AVN reentry (AVNRT) using a thermistor tipped catheter system with a posterior (slow pathway) approach. RFA success (S) was ≤2 AVNRT echos after RFA; only 1 pt had AVNRT at follow-up. There were 166 RFA [55 S; 111 failure (F)], with 3 ± 3/pt. Local atrial electrogram morphology was—A (low to isoelectric to high frequency); B (low to high frequency); and C (≥2 high frequency components). Differences with S vs F, respectively, are: atrial amplitude (396 ± 181 vs 357 ± 205 μV, $p < 0.001$); ventricular amp. (3.0 ± 1.6 vs 2.7 ± 1.6 mV, $p < 0.001$); time to onset of junctional tachycardia (JT) (2.1 ± 1.9 vs 4.6 ± 6.1 sec, $p < 0.05$); duration of JT (14.6 ± 8.6 vs 11.6 ± 7.7 sec, $p < 0.001$); CL of JT (481 ± 92 vs 511 ± 120 ms, $p < 0.001$); and change in CL of JT during RFA (−34 ± 113 vs +23 ± 128 ms, $p < 0.03$). Of note, continuous JT was more common at S sites (46% vs 21%), and JT occurred in ≤7.5 sec at all S sites. No differences between S vs F were in: power (46.8 ± 7.5 vs 44.5 ± 8.6 W); catheter tip temp. (52.6 ± 4.6 vs 49.3 ± 5.5°C); atrial electrogram duration (66 ± 20 vs 66 ± 19 ms); or type of local atrial electrogram. We conclude: 1) Successful RFA to cure AVNRT more frequently occurs with rapid onset of continuous junctional tachycardia with a CL that shortens before termination and, 2) there is no specific local atrial electrogram morphology that predicts success.

04:15

724-2 Electrophysiologic Endpoints of Successful Radiofrequency Catheter Modification for Atrioventricular Nodal Reentrant Tachycardia. Are There "Good" and "Bad" Persistent Echoes?

Anwer Dhala, Zalmen Blanck, Margaret Budziszewski, Michael Biehl, Sanjay Deshpande, Jasbir Sra, Mohammad R. Jazayeri, Masood Akhtar. *Sinai Samaritan/St. Luke's Medical Center, Milwaukee, WI*

Transcatheter treatment of atrioventricular nodal reentrant tachycardia (AVNRT) modifies but frequently does not eliminate the electrophysiologic substrate for reentry. The extent of modification required thus remains unclear. High recurrence rates have been reported when single AV nodal echos (AVNe) remain inducible. We, therefore, prospectively evaluated the characteristics of AVNe pre and post AV nodal modification.

Results: Ablation was deemed successful when sustained AVNRT could not be induced on isoproternol (ISO). After successful ablation, AVNe was inducible in 24 pts and noninducible in 72 pts. Other electrophysiologic parameters in these two groups were comparable with similar increases in 1:1 AV block cycle lengths (356 to 413 and 368 to 400 msec, $p < 0.005$) and AVNERP (258 to 317 and 264 to 313 msec, $p < 0.001$) pre to post ablation. In Group 1 patients, persistent AVNes following successful ablation (good echoes) were associated with an increase in AH interval in all but one patient as compared